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Long-period variations of pulsar emission and the dynamical ellipticity of neutron stars

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Abstract

Assuming that the observed periodic variations of pulsar emission are due to the free precession of the spin axis, we investigate the evolution of the rotation of a two-layer neutron star using the Hamiltonian method of Getino. We model the dynamical characteristics of a rotating neutron star using the observed variations of the emission of seven pulsars. We estimate the dependence of the period of the Chandler wobble, the period of precession of the spin axis, and the dynamical ellipticity of a neutron star on the model used to describe the super-dense neutron matter and the mass of the star. © 2008 Pleiades Publishing, Ltd.

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